

Remarks

This is in response to the final Office Action mailed on March 30, 2006. Claims 1 and 23 are amended. Claims 1-9, 12-31, and 34-45 remain pending. Reconsideration and allowance are requested for at least the following reasons.

I. Claim Rejections - 35 U.S.C. 103

In section 6 of the Action, claims 1-4, 6-9, 13-16, 20-26, 28-31, 35-38, and 43-45 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Koltai et al., U.S. Patent No. 6,104,812, in view of McGrew, U.S. Patent No. 5,396,559. This rejection is respectfully traversed, and reconsideration is requested for the following reasons.

Claim 1 recites modulating a phase of the dot pattern to embed each latent image object into its respective watermark layer.

Although the correctness of the Action's interpretation of Koltai is not conceded, the Action states that Koltai fails to explicitly disclose phase modulation. The Action cites McGrew as disclosing dot patterns where one is phase modulated with respect to the other. The Action states that it would have been obvious to one skilled in the art to combine McGrew with Koltai to arrive at the claimed invention.

For at least the following reasons, it is suggested that, even if McGrew can be combined with Koltai (the ability to combine is not conceded), neither reference, alone or in combination, discloses or suggests modulating a phase of the dot pattern to embed each latent image object into its respective watermark layer, as recited by claim 1.

For example, McGrew discloses at column 4, lines 39-43, two patterns of dots, including a reference pattern (see Figure 4A) and a message pattern (see Figure 4B). The message pattern is a modulated version of the reference pattern "with the dots 431, 432 within the boundary letter 'A' being offset a distance equal to the width of a dot." McGrew, col. 4, ll. 63-67. While McGrew does use the term "modulate," McGrew does not disclose or suggest modulating a phase of the reference or message patterns. Instead, McGrew discloses simple alteration of a dot pattern or the repositioning of dots similar to that disclosed in Koltai, and does not suggest modulating a phase of the dot pattern.

The Action also cites Amidror et al., U.S. Patent No. 5,995,638, which characterizes the disclosure of McGrew. The relevant section of Amidror reads as follows:

The only method known until now in which a moire effect is used to make visible an image en coded on the document (as described, for example, in the section "Background" of U.S. Pat. No. 5,396,559 (McGrew)) is based on the physical presence of that image on the document as a latent image, using the technique known as "phase modulation". In this technique, a uniform line grating or a uniform random screen of dots is printed on the document, but within the pre-defined borders of the latent image on the document the same line grating (or respectively, the same random dot-screen) is printed in a different phase, or possibly in a different orientation. For a layman, the latent image thus printed on the document is hard to distinguish from its background; but when a reference transparency consisting of an identical, but unmodulated, line grating (respectively, random dot-screen) is superposed on the document, thereby generating a moire effect, the latent image pre-designed on the document becomes clearly visible, since within its pre-defined borders the moire effect appears in a different phase than in the background.

Col. 1, l. 55 - col. 2, l. 8 (underlining added). A careful reading of this section of Amidror makes clear that the reference to McGrew is made simply to note that McGrew discloses a technique involving the moiré effect. Amidror does not state that McGrew itself discloses "phase modulation."

The moiré effect referenced in Amidror and described in the background section of McGrew is the effect of superimposing a repetitive design on the same or a different design to produce a new pattern. The pattern created by the moiré effect results from the distribution of superimposed dark and light areas. See Amidror, Isaac, The Theory of the Moiré Phenomenon, Kluwer Academic Publishers, p. 1 (2000). The moiré effect does not necessarily relate to phase modulation.

McGrew is therefore silent with respect to modulation using phase. Amidror simply notes that McGrew describes the moiré effect. None of the references of record, alone or in combination, discloses or suggests modulating a phase of the dot pattern to embed each latent image object into its respective watermark layer. Reconsideration and allowance of claim 1, as well as claims 2-4, 6-9, 13-16, and 20-22 that depend therefrom, are therefore requested.

Claim 23 is directed to an optical watermark stored on a computer-readable medium. Claim 23 recites, among other limitations, at least one latent image object embedded into each

watermark layer by modulating a phase of the dot pattern. Claim 23 is allowable for at least reasons similar to those provided above with respect to claim 1. Reconsideration and allowance of claim 23, as well as claims 24-26, 28-31, 35-38, and 43-45 that depend therefrom, are therefore respectfully requested.

In sections 7-12 of the Action, claims 5, 12, 17-19, 27, 34, and 39-42 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Koltai and McGrew in view of various tertiary references. These rejections are respectfully traversed, and reconsideration is requested for at least the following reasons.

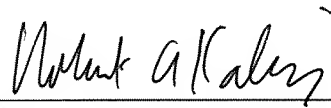
Claims 5, 12, 17-19, 27, 34, and 39-42 all depend respectively from one of claims 1 and 23. None of the tertiary references remedies the shortcomings of Koltai and McGrew noted above. Therefore, claims 5, 12, 17-19, 27, 34, and 39-42 are allowable for at least the same reasons as those provided above with respect to claims 1 and 23. Reconsideration and allowance are therefore respectfully requested.

II. Conclusion

Favorable reconsideration in the form of a Notice of Allowance is respectfully requested. Please contact the undersigned attorney with any questions regarding this application.

Respectfully submitted,
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